PART 1

PROJECT DETAILS

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PART-1

PROJECT DETAILS

1.1 Background to the Project

Bangalore Water Supply and Sewerage Board (BWSSB), is the nodal agency responsible for planning and executing water supply and sewerage projects in Bengaluru. Recognizing the potential of Used Water Treatment Plants (UWTPs) to achieve water security by protecting freshwater resources and promoting a circular economy of water, the Ministry of Housing and Urban Affairs (MoHUA) has launched the "Jal Hi AMRIT" program. This initiative by GoI is aims to create "Water Secure Cities".Further the Jal hi Amrit (JHA) aims to achieve,

- Efficient management of Sewage Treatment Plants (STPs)
- To produce a continuous supply of high-quality treated water that meets environmental standards and supports sustainable water recycling practices.
- To promote a circular economy of water by enabling reuse for various purposes like construction, industry, and irrigation.

The existing Sewage Treatment Plant (STP) at Bellanduru Amanikere is of 90 MLD capacity is of secondary treatment is based on ASP with BNR removal with disinfection & sludge handling units. Hence, BWSSB has proposed the up-gradation and existing 90 MLD Bellanduru Amanikere STP by installing tertiary treatment units **(Ultrafiltration system of capacity 2.5 MLD followed by UV disinfection System)** including its Electro-Mechanical Equipment's with associated ancillary units complete

1.2 Works Details for Contract Package

The proposed system under this **Contract** consists of up-gradation of existing ASP ASP with removal of BNR treatment process based STP by installing tertiary treatment units **(Ultrafiltration system of capacity 2.5 MLD followed by UV disinfection System)** and all its associated Electro-Mechanical Equipment's complete to meet the outlet parameter as specified in bid document including required new civil unit and modifications as required complete.

1.3 Component List

Following table shows the design average flow capacities of STP with the existing treatment process at site.

Sl No.	STP Name	Average Capacity (MLD)	Existing Treatment Process
1	90 MLD Bellanduru Amanikere STP	2.5	Preliminary treatment of fine screening and grit removal followed by ASP with removal of BNR treatment process along with sludge handling system

1.4 Scope of Work

The Scope of Work under this contract includes but is not limited to the following in relation to the up-gradation Works, which are to be implemented under this contract:

- Submission of Design, Methodology for construction/modification sequence shall be submitted for Engineers approval before start of the construction works.

- Bidder to plan Construction/modification sequence of tertiary works such that the existing treatment plant should be remain in operation.
- All preparatory work including clearing, leveling of site, site grading, formation of Finished Ground Level (FGL), construction/modifications of internal roads, etc., excavation, dewatering as required and disposal of all surplus earth to a suitable location as specified/directed by Engineer.
- Topographical survey, geotechnical investigation, and any other investigation complete.
- All existing facilities that are to be refurbished/modified/demolished to accommodate new works, where ever necessary. The demolition civil debris shall be disposed by the contractor as per statutory requirements wherever necessary.
- Demolishing/Refurbishing shall be carried out in accordance with all applicable laws, regulations, and standards. Items, components, or materials, whether buried, exposed, submerged, or otherwise, shall not be abandoned or left on site unless explicitly specified.
- Preparation of process and hydraulic designs with layout, process flow diagram, piping and instrumentation diagram, mass balance and hydraulic flow diagram of the proposed tertiary treatment works viz., Ultrafiltration and UV dosing system stipulated in scope.
- Preparation of GA Drawings, Unit Process/Equipment/Facility/Building layouts, etc. complete.
- Detailed sizing as to suit existing facilities, design, and engineering, of all treatment units, buildings, structures, and equipment (including all civil, mechanical, electrical, architectural, instrumentation, control, automation, and SCADA components).
- Submission of detailed engineering designs, drawings, calculations, and data sheets as per requirements of Bidding Document.
- Design, construction, testing and commissioning of all proposed civil structures, building works, bypass lines and other pipelines complete.
- Procurement, supply, installation, erection, testing and commissioning of all proposed mechanical, electrical, instrumentation, PLC/SCADA system complete, to integrate / suit existing facilities.
- Design, construction, and commissioning of all pipelines, channels.
- Tertiary treatment plant testing, commissioning, stabilization, demonstration of performance guarantee.
- Submission of Operation and Maintenance Manuals relating to this work.
- Providing training services to Employer's personnel including O&M staff.
- Restoration of all damaged roads drains, plantation and landscaping works to original condition to give pleasant environment of build out campus.
- Preparation and submission of As-Built drawings for all civil, mechanical, electrical, Instrumentation, SCADA works complete.
- Integration of proposed PLC system to existing main PLC based SCADA system for monitoring.
- Handing over the facilities.

1.5 Site Conditions

Plant shall be designed and constructed taking into account the following:

Annual Average Ambient Temperature	:	27^{o} C (Minimum 15^{o}C - Maximum 45^{o} C)
Relative Humidity (maximum)	:	75 %
Site Conditions	:	Tropical

1.6 Minimum Design Life

The Plant components shall be designed and constructed to provide the minimum service life listed below for each component.

Reinforced Concrete Structures	:	60Years
Buried Piping	:	60 Years
Other Civil Structures	:	50 Years
Steel Structures	:	50 Years
Buried Earth Electrode System	:	40 Years
Mechanical Equipment	:	20 Years
Electrical Equipment	:	15 Years
Control Panels	:	15 Years
Instrumentation Systems	:	10 Years
Diffusers	:	7 Years
Computer System	:	7 Years
All type of Server and Computer based Software's	:	Should be updated to latest version

1.7 Access for Other Contractors

The Contractor shall allow reasonable access to other Contractors engaged on the Site or on areas adjoining the Site to carry out their work. In the event of a dispute over access or priority between Contractors, the Engineer shall be informed in writing. The Engineer shall inform all parties concerned in writing of his decision.

Where any part of the Works is associated with or in physical contact with plant supplied under a separate contract, the Contractor shall satisfy himself that the work carried out by the other Contractor is consistent with the correct operation of the Plant. In the event of the Contractor considering any work being carried out or any work already completed to be detrimental to the ultimate operation of the Plant, he shall report the matter to the Engineer.

If the work of the Contractor is delayed because of any acts or omissions of any other contractor, the Contractor shall have no claim against the Employer on that account other than for an extension of time.

1.8 Survey and Geotechnical Data

Contractor shall carry out independently fresh survey, geotechnical investigation and all other details necessary for proper planning, detailed design and execution of all works under this Contract. The Contractor will be required to provide full details of the survey and geotechnical investigations of works for approval of the Employer.

End of Part 1